REMARKS/ARGUMENTS

Claims 1-27 are pending in the present application. Reconsideration of the claims is respectfully requested.

I. Interview

Applicants appreciate the courtesies extended by the Examiner during the interview that was held on September 12, 2006. Applicants' claim 1 was discussed. No agreement was reached.

II. 35 U.S.C. § 103(a), Obviousness

The Examiner has rejected claims 1-6, 10-13, 15, and 19-24 under 35 U.S.C. § 103(a) as being unpatentable over Applicant Admitted Prior Art (hereinafter *AAPA*), in view of U.S. Patent 6,550,017 issued to *Moiin et al.* (hereinafter *Moiin*). This rejection is respectfully traversed.

Moiin teaches a system and method for monitoring a fault tolerant computer system. Figure 1 depicts such a computer system. The computer system of Figure 1 includes four nodes, 30.0-30.3. Each node includes a processor as well as other components. Each node is connected to a public network 10 and a private network 24. The system includes both dedicated and shared storage. Some nodes share the same storage.

Each node also includes two power supplies. For example, node 30.0 includes power supplies 36A.0 and 36B.0. The power supplies in each node are connected to a maintenance bus 60. A node is removed from the computer system, utilizing maintenance bus 60, by turning off its power supplies.

The computer system includes a partition monitor (PM) 22. There is only one partition monitor in the computer system. The partition monitor is connected to the public network 10 and the maintenance bus 60. The partition monitor controls the partitioning of the shared storage between nodes. The partition monitor ensures that only one of the nodes can access a storage unit at any one time. The partition monitor accomplishes this by turning the nodes on and off by turning the nodes' power supplies on and off through the maintenance bus 60.

Each node in the computer system also includes a connectivity monitor (CM) 128. The connectivity monitor cooperates with the partition monitor to discover failures of the private network 24. The connectivity monitor in each node maintains a list of nodes and networks that it identifies as functioning. The connectivity monitor also ensures that the physical links between the nodes are operational by exchanging heartbeats.

The partition monitor then collects the connectivity information from each connectivity monitor. The partition monitor detects new partitions and selects an optimal system. The partition monitor turns

power off to those nodes that are not to be included in the optimal system. The partition monitor then issues the appropriate message to the system administrator about the optimal system.

Applicants' independent claims describe a service partition, a service application, and a service processor. The service processor monitors a presence of the service application. The service application is executing on a hardware management console. In response to an absence of the service application, the absence of the service application is reported, using the service partition, to a system administrator of the service partition.

The Examiner states that *AAPA* teaches the features of Applicants' claims but does not teach either "monitoring, by said service processor, a presence of said service application executing on said hardware management console" or "in response to an absence of said service application, reporting, utilizing said service partition, said absence of said service application to a system administrator of said service partition". The Examiner relies on *Moiin* to teach these features. Specifically, the Examiner refers to *Moiin*, column 8, lines 40-50, and asserts that *Moiin* teaches a service application by teaching the connectivity monitor.

According to Applicants' claims, a presence of the service application is monitored. If, as the Examiner asserts, the connectivity monitor is indeed analogous to the service application claimed by Applicants, the presence/absence of the connectivity monitor must be monitored. The Examiner refers to column 8, lines 40-50. *Moiin*, column 8, lines 37-51, states:

> If, however, there is no ON signal associated with any power supply unit for a node (or potential node position in the network), then it is assumed that a node is either absent, or inoperative. As a result, it is not configured as part of the distributed fault tolerant system 20 by the management subsystem 126.
>
> Also shown in FIG. 3 is the connectivity monitor (CM) 128. This is another real-time daemon that is responsible for monitoring the health of the private communication medium and providing a logical connection between any pair of nodes in the system.
>
> A global database manager (GDM) 130 forms a small and restricted database subsystem that maintains the list of resources and their current owners and their backups.

Moiin, column 8, lines 37-51.

Thus, *Moiin* teaches a connectivity monitor (CM) that monitors the health of the medium. The connectivity monitor also provides a logical connection. *Moiin* does not, however, teach the possibility that the connectivity monitor (CM) could ever be absent, and does not teach monitoring a presence of the connectivity monitor. Therefore, the connectivity monitor of *Moiin* is not analogous to Applicants' service application. *Moiin* does not teach or suggest a service application where the presence of that service application is monitored.

Also according to Applicants' claims, it is a service processor that monitors a presence of the service application. The Examiner refers to *Moiin*, column 11, lines 40-67, and asserts that *Moiin* teaches a service processor by teaching a partition monitor. *Moiin*, column 11, line 40, through column 12, line 2, states:

> When a node is the only member of the system, and therefore, the default master of the global database manager, special administrative commands are required.
>
> The connectivity monitor 128 cooperates with the partition monitor 22 to discover failures of the private communication medium 24 and to mask them from the application programs if it is able to do so. The connectivity monitor 128 on each node 30 of the distributed system sends its connectivity graph to the partition monitor and it enables a logical connection between the nodes 30 of the system that is built on top of redundant physical links. This allows the other modules of the system and the application processes (where distributed applications are supported) to communicate via a fault tolerant link and be immune from the failures of the private communication medium 24. The connectivity monitor needs to ensure that the links are operational and this can be done via exchange of heartbeats. The connectivity monitor 128 is either a real-time user-land process using TCP (Transmission Control Protocol), which ensures that all failures up to the TCP layer are covered, or it will be based on an interrupt handling mechanism, it being noted that the latter will provide less coverage for software faults. The connectivity monitor 128 maintains the list of nodes and networks that it identifies as functioning and sends that information to the partition monitor through a mechanism other than the private network (possibly RS232). The partition monitor 22 ensures that there are no partitions in the system by collecting all the connectivity information and using its ability to turn off the PSUs of a node.

Moiin, column 11, line 40, through column 12, line 2.

If, as the Examiner asserts, the partition monitor is analogous to Applicants' service processor and the connectivity monitor is analogous to Applicants' service application, then the partition monitor must monitor the presence of the connectivity monitor. This is not what is taught by *Moiin*, however. As is made clear from the passage of *Moiin* that is reproduced above, the partition monitor of *Moiin* uses the information provided to it by the connectivity monitor in order to select nodes to include in an optimal system. Nowhere in *Moiin* is the partition monitor described as monitoring the presence of the connectivity monitor.

Therefore, the partition monitor is not analogous to Applicants' service processor and the connectivity monitor is not analogous to Applicants' service application. *Moiin* does not teach or suggest monitoring, by a service processor, a presence of a service application.

According to another feature of Applicants' claims, in response to an absence of the service application, the service partition reports the absence of the service application to a system administrator of the service partition. The Examiner asserts that *Moiin* teaches this feature at column 12, lines 1-15. *Moiin*, column 12, lines 1-16, is reproduced below:

> system by collecting all the connectivity information and using its ability to turn off the PSUs of a node.
>
> As has been mentioned above, partition monitor 22 is effective to ensure that there is only one fully connected network operating as a distributed fault tolerant system at any given time. The partition monitor 22 accomplishes its task by collecting the required connectivity information from each connectivity monitor, detecting any partitions and selecting an "optimal" sub-system if there is a partition. It will then turn the power off to those nodes that are not in the new and optimal distributed fault tolerant system and issues the appropriate messages to the (possibly remote) system administrator to inform him or her that errors have occurred in the communication system. In the present example, the partition monitor 22 is hosted in an external box and has some software capabilities.

Moiin, column 12, lines 1-16.

As discussed above, the Examiner asserts that the partition monitor is analogous to Applicants' service processor and the connectivity monitor is analogous to Applicants' service application. The Examiner does not point to an element in *Moiin* that is supposedly analogous to Applicants' service partition.

In order to teach in response to an absence of the service application, reporting, utilizing the service partition, the absence of the service application to a system administrator of the service partition, *Moiin* must teach in response to an absence of the connectivity monitor, reporting, utilizing a service partition, the absence of the connectivity monitor to a system administrator of the service partition. *Moiin* does not teach this, however. *Moiin* teaches merely that the partition monitor sends messages to a system administrator. *Moiin* does not teach that these messages concern the connectivity monitor, which the Examiner believes is analogous to Applicants' service application. Furthermore, *Moiin* does not teach that the messages are sent using a service partition, or that these messages are sent to a system administrator of that service partition.

Therefore, *Moiin* does not teach, in response to an absence of said service application, reporting, utilizing said service partition, said absence of said service application to a system administrator of said service partition.

Because *Moiin* does not teach monitoring, by said service processor, a presence of said service application executing on said hardware management console; and in response to an absence of said service application, reporting, utilizing said service partition, said absence of said service application to a system administrator of said service partition, the combination of *AAPA* and *Moiin* does not render Applicants' independent claims obvious.

Applicants' claim 3 recites outputting a signal from said service application utilizing said hardware management console to said service processor; and utilizing said signal, by said service processor, to monitor a presence of said service application. Regarding claim 3, the Examiner states that *AAPA* does not teach detecting an absence of the service application and relies on *Moiin* to teach this feature.

Merely detecting an absence of the service application is not what is recited in claim 3, however. Claim 3 recites outputting a signal from the service application and then using this signal to monitor a presence of the service application. In the rejection of claim 3, the Examiner has not considered all of the features, and the interrelationships, of this claim.

Applicants' claim 4 recites determining that said service application is absent in response to an absence of said signal. This is the signal of claim 3 that is output from the service application. As noted above, the Examiner believes the partition monitor is analogous to the service processor and the connectivity monitor is analogous to the service application. Therefore, in order to teach this feature, *Moiin* must teach the connectivity monitor outputting a signal to the partition monitor. *Moiin* must teach the partition monitor using the signal output from the connectivity monitor to monitor a presence of the connectivity monitor. In addition, *Moiin* must also teach determining that the connectivity monitor is absent in response to an absence of this signal. *Moiin* does not teach this.

The remaining rejected claims recite features that are similar to those discussed above and are patentable for the reasons given above.

The Examiner has rejected claims 7-9, 16-18, and 25-27 under 35 U.S.C. § 103(a) as being unpatentable over *AAPA* and *Moiin*, and further in view of U.S. Patent Application Publication 2002/0021671 published by *Quinlan*. This rejection is respectfully traversed.

Claim 7 recites in response to an entry of a message that said hardware management console is connected to said logically partitioned computer system, displaying a message utilizing said service partition prompting said system administrator to check physical links between said hardware management console and said logically partitioned computer system; receiving an entry in response to said message; and in response to an entry that said physical links are not intact, displaying a message utilizing said service partition prompting said system administrator to reestablish said physical links between said hardware management console and said logically partitioned computer system.

The Examiner states that the combination of *AAPA* and *Moiin* does not teach the links being physical links and relies on *Quinlan* to supply this feature.

Quinlan teaches a method of detecting a network link failure. This failure may be the result of a lack of synchronization between two devices, an incompatibility of the link protocols used by the two devices, or a problem with the link itself. It is a method of diagnosing the failure of the connection

between two devices. The method comprises connecting the two devices together using a link. *Quinlan* describes a device B including registers that store information about a failure of the link between device B and another device to which device B is attached, such as device A.

The Examiner does not point to any section of *AAPA*, *Moiin*, or *Quinlan* that teaches a service partition. Neither *AAPA*, nor *Moiin*, nor *Quinlan* teaches or suggests monitoring, by said service processor, a presence of said service application executing on said hardware management console; and in response to an absence of said service application, reporting, utilizing said service partition, said absence of said service application to a system administrator of said service partition in combination with the features of claim 7. Therefore, the combination of *AAPA*, *Moiin*, and *Quinlan* does not render claim 7 obvious because the combination of *AAPA*, *Moiin*, and *Quinlan* does not teach or suggest all of the features of claim 7.

The remaining claims recite features that are similar to the features of claim 7 and are patentable for the reasons given above.

III. Conclusion

It is respectfully urged that the subject application is patentable over *AAPA* and *Moiin* and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

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